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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,710	01/28/2002	Mark E. Holzbach	M-8621-1D US	7765
33031	7590	11/02/2004	EXAMINER	
CAMPBELL STEPHENSON ASCOLESE, LLP			CURTIS, CRAIG	
4807 SPICEWOOD SPRINGS RD.				
BLDG. 4, SUITE 201			ART UNIT	PAPER NUMBER
AUSTIN, TX 78759			2872	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/058,710	Applicant(s) HOLZBACH ET AL.	
	Examiner Craig Curtis	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Disposition of the Instant Application

- This Office action is responsive to Applicants' Amendment filed on 19 July 2004, which has been made of record in the file.
- Claims 1-11 presently are pending in the instant application.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the image plane limitations recited in the claims (see, e.g., lines 4-6 & 8 in claim 1; lines 3-5 & 7 in claim 10; and lines 4-6 & 8 in claim 11) **must be shown or the feature(s) canceled from the claim(s).** (Emphasis added.) Presently, only hologram plane 13 is depicted in the drawings. **No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page

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header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, Applicants will be notified and informed of any required corrective action in the next Office action. **This objection to the drawings will not be held in abeyance.**

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as their invention. The meaning of the recitation “defining a near clipping plane of said frustra on said image plane” (recited in line 8 of claim 1, line 7 of claim 10, and line 8 of claim 11, respectively) cannot be ascertained by the Examiner. The Examiner could understand, for example, how one or more near clipping planes could be defined as being a certain distance away from said image plane (as measured along a z-axis orthogonal to said image plane); but this interpretation is not unambiguously conveyed by the claims as they are presently drafted. If by reciting aforesaid limitation Applicants simply intended to convey that near clipping planes are defined a certain distance along each or both of said frustra, said frustra themselves being defined with respect to (read: on opposing sides of) said image plane, they are respectfully requested to amend the claims in such a manner that this sense is particularly pointed out and distinctly claimed in same.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halle et al.'s *Fast Computer Graphics for Rendering Full Parallax Spatial Displays* in view of Robertson et al. (5,949,430).

Halle et al. disclose the invention as claimed: A computer-implemented method of rendering data for producing a full parallax autostereoscopic display of a digital scene (See title of article), comprising the steps of (See pp. 1-7):

defining an image plane that passes through at least a portion of said scene (Fig. 1);

dividing the image plane into a plurality of contiguous image elements (Id.);

simulating two camera frustra on opposing sides of said image plane, each camera frustrum having an associated eyepoint (implicit; see Fig. 4));

defining a near clipping plane of said frustra on said image plane (See Fig. 5)

generating, for each of said elements, image data for each of said cameras; and

combining said image data, thereby rendering said scene; wherein the method is performed to produce holograms, and wherein said generating step provides holographic image data (see conclusion: lines 4 and 5); wherein said positioning step provides a single non-clipping plane distance

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for all of said elements, wherein said positioning step provides near clipping plane distances within a predetermined range (see Section 4, p. 109); wherein the method is performed to produce a hologram, and further comprising the step of rendering image data for said degenerate elements by special compositing of images from said camera frustra (see Section 6, pg. 110); Halle further teaches repositioning said camera frustra in a direction parallel to said image plane (see above); wherein said scene is comprised of polygons, and said determining step compares z vertices of said polygons with a z distance of said clipping plane (see Table 1; §§ 4, 5); said method further comprising the step of evaluating said image data for depth resolution and compensating said image data based on said evaluating step (see § 3)--**EXCEPT FOR** explicit teachings of the following additionally recited limitations:

for each image element, determining a distance between said eyepoint and said near clipping plane that would avoid near clipping of said scene, thereby determining a set of near clipping plane distances; and

positioning said camera frustra along said z axis in accordance with one or more of said near clipping plane distances.

Robertson et al., however, provide a teaching of commonly used methods (viz., culling algorithms: see column 8, lines 23-28), each of which could arguably be used to determine a distance between an eyepoint (e.g., the tip of camera 1402's FOV depicted in Fig. 14) and a near clipping plane that would avoid near clipping of a scene, thereby determining a set of near clipping plane distances; and positioning said camera frustra along said z axis (read: z-axis) in accordance with one or more of said near clipping plane distances.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teachings of **Halle et al.** such that one of the culling algorithms taught by **Robertson et al.** be implemented, including positioning said camera frustra along said z axis in accordance with one or more of said near clipping plane distances (see, e.g., Fig. 14 in **Robertson et al.**), for at least the purpose of optimizing not only said computer-implemented method of rendering data taught by **Halle et al.**, but the overall visual characteristics exhibited by prints or various media generated via such a method.

Response to Arguments

4. Applicants' arguments filed on 19 July 2004 with respect to claims 1-11 have been considered fully but are moot in view of the new ground(s) of rejection. With regard to Applicants' assertion, however, that "the Examiner has not shown that there is some suggestion or motivation to combine Halle et al. and Priem, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, and that the Examiner has provided no indication about the source of the "desire" that would motivate or suggest such a combination [as that supplied in the previous Office action]," the Examiner realizes that references cannot arbitrarily be combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to made the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific

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disclosures. *In re Bozek*, 163 USPQ 54 (CCPA 1969). In the present case, as was the case in the previous Office action, the proposed modification has been/was asserted for the purpose of giving Applicants an opportunity to explain, on the record, if so compelled, why such modification of the teachings of the primary reference was/is without merit.

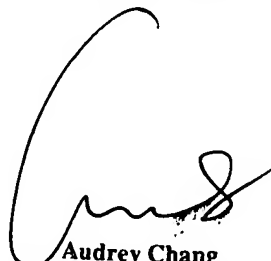
Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (571) 272-2311. The examiner can normally be reached on Monday-Friday, 9:00 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn, can be reached at (571) 272-2311. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.H.C.
Craig H. Curtis
Group Art Unit
26 October 2004



Audrey Chang
Primary Examiner
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